WHAT IS CLAIMED IS:

1. A vertical cavity surface emitting laser (VCSEL), comprising:

a first mirror stack;

a second mirror stack;

a cavity region disposed between the first mirror stack and the second mirror stack and including an active region;

a defect source; and

a reliability-enhancing layer positioned with respect to the defect source to reduce defect-induced degradation of one or more VCSEL regions.

2. The VCSEL of claim 1, wherein the reliability-enhancing layer is positioned between the defect source and the cavity region.

3. The VCSEL of claim 1, wherein the reliability-enhancing layer is positioned within the defect source.

4. The VCSEL of claim 1, wherein the reliability-enhancing layer is positioned in close proximity to the defect source.

5. The VCSEL of claim 1, wherein the defect source is disposed between the reliability-enhancing layer and the cavity region.

6. The VCSEL of claim 1, further comprising a second reliability-enhancing layer separated from the first reliability-enhancing layer by one or more other layers.

7. The VCSEL of claim 1, wherein the reliability-enhancing layer comprises one or more of the following elements: indium, boron, phosphorus, antimony, and nitrogen.

8. The VCSEL of claim 1, wherein the reliability-enhancing layer is lattice-matched to surrounding layers.

9. The VCSEL of claim 1, wherein the reliability-enhancing layer includes one or more strained layers.

10. The VCSEL of claim 1, wherein the reliability-enhancing layer includes a superlattice.

11. The VCSEL of claim 10, wherein the superlattice is strained.

12. The VCSEL of claim 10, wherein the superlattice is lattice-matched to surrounding layers.

13. The VCSEL of claim 10, wherein the superlattice is strain-compensated for the surrounding layers.

14. The VCSEL of claim 1, wherein the defect source includes an oxidized portion of the VCSEL.

15. The VCSEL of claim 1, wherein the defect source includes an implant region of the VCSEL.

16. The VCSEL of claim 1, wherein the defect source includes an exposed region of the VCSEL.

17. The VCSEL of claim 1, wherein the defect source includes one or more dielectric layers.

18. The VCSEL of claim 1, wherein the defect source includes a doped region of the VCSEL.

19. The VCSEL of claim 1, wherein the defect source includes a substrate.

20. The VCSEL of claim 1, wherein the reliability-enhancing layer is configured to at least in part balance strain created by the defect source.

21. The VCSEL of claim 20, wherein the defect source includes an oxide region inducing a compressive strain field, and the reliability-enhancing layer is positioned within the compressive strain field and is characterized by tensile strain.

22. The VCSEL of claim 1, wherein the defect source creates a concentration gradient inducing defect migration, and the reliability-enhancing layer is configured to reduce the induced defect migration.

23. The VCSEL of claim 22, wherein the defect source is characterized by a relatively high group V vacancy concentration, and the reliability-enhancing layer is characterized by a low group V vacancy diffusion rate.

24. A method of manufacturing a vertical cavity surface emitting laser (VCSEL), comprising:

forming a first mirror stack, a second mirror stack, and a cavity region disposed therebetween, wherein the cavity region includes an active region;

forming a defect source; and

forming a reliability-enhancing layer positioned with respect to the defect source to reduce defect-induced degradation of one or more VCSEL regions.

25. The method of claim 24, wherein the reliability-enhancing layer is positioned between the defect source and the cavity region.

26. The method of claim 24, wherein the reliability-enhancing layer is positioned within the defect source.

27. The method of claim 24, wherein the reliability-enhancing layer is positioned in close proximity to the defect source.

28. The method of claim 24, wherein the defect source is disposed between the reliability-enhancing layer and the cavity region.

29. The method of claim 24, further comprising forming a second reliability-enhancing layer separated from the first reliability-enhancing layer by one or more other layers.

30. The method of claim 24, wherein the reliability-enhancing layer comprises one or more of the following elements: indium, boron, phosphorus, antimony, and nitrogen.

31. The method of claim 24, wherein the reliability-enhancing layer is lattice-matched to surrounding layers.

32. The method of claim 24, wherein the reliability-enhancing layer includes one or more strained layers.

33. The method of claim 24, wherein the reliability-enhancing layer includes a superlattice.

34. The method of claim 33, wherein the superlattice is strained.

35. The method of claim 33, wherein the superlattice is lattice-matched to surrounding layers.

36. The method of claim 33, wherein the superlattice is strain-compensated for the surrounding layers.

37. The method of claim 24, wherein the defect source includes an oxidized portion of the VCSEL.

38. The method of claim 24, wherein the defect source includes an implant region of the VCSEL.

39. The method of claim 24, wherein the defect source includes an exposed region of the VCSEL.

40. The method of claim 24, wherein the defect source includes one or more dielectric layers.

41. The method of claim 24, wherein the defect source includes a doped region of the VCSEL.

42. The method of claim 24, wherein the defect source includes a substrate.

43. The method of claim 24, wherein the reliability-enhancing layer is configured to at least in part balance strain created by the defect source.

44. The method of claim 43, wherein the defect source includes an oxide region inducing a compressive strain field, and the reliability-enhancing layer is positioned within the compressive strain field and is characterized by tensile strain.

45. The method of claim 24, wherein the defect source creates a concentration gradient inducing defect migration, and the reliability-enhancing layer is configured to reduce the induced defect migration.

46. The method of claim 45, wherein the defect source is characterized by a relatively high group V vacancy concentration, and the reliability-enhancing layer is characterized by a low group V vacancy diffusion rate.